

October 01, 2021

Report to:  
Holly Beggy  
Hudbay Minerals  
5255 E Williams Circle  
Suite W1065  
Tucson, AZ 85711

Bill to:  
Rosemont Copper Company  
Hudbay Minerals  
5255 E Williams Circle  
Suite W1065  
Tucson, AZ 85711

cc: David Krizek

Project ID:  
ACZ Project ID: L68738

Holly Beggy:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 23, 2021. This project has been assigned to ACZ's project number, L68738. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L68738. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 31, 2021. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Sue Webber has reviewed and  
approved this report.



**Hudbay Minerals**

Project ID:

Sample ID: D1-20A BIO

ACZ Sample ID: **L68738-01**

Date Sampled: 09/21/21 08:30

Date Received: 09/23/21

Sample Matrix: Plant Tissue

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total (3050)	M6010D ICP	103	174		*	mg/Kg	5.15	25.8	09/30/21 12:02	kja
Antimony, total (3050)	M6020B ICP-MS	515	<0.206	U	*	mg/Kg	0.206	1.03	09/29/21 17:12	bsu
Arsenic, total (3050)	M6020B ICP-MS	515	0.187	B	*	mg/Kg	0.103	0.515	09/29/21 17:12	bsu
Cadmium, total (3050)	M6020B ICP-MS	515	0.0266	B	*	mg/Kg	0.0258	0.129	09/29/21 17:12	bsu
Calcium, total (3050)	M6010D ICP	103	6820		*	mg/Kg	10.3	51.5	09/30/21 12:02	kja
Copper, total (3050)	M6020B ICP-MS	515	17.6		*	mg/Kg	0.412	1.03	09/29/21 17:12	bsu
Iron, total (3050)	M6010D ICP	103	206		*	mg/Kg	6.18	15.5	09/30/21 12:02	kja
Lead, total (3050)	M6020B ICP-MS	515	0.234	B	*	mg/Kg	0.0515	0.258	09/29/21 17:12	bsu
Magnesium, total (3050)	M6010D ICP	103	2180		*	mg/Kg	20.6	103	09/30/21 12:02	kja
Manganese, total (3050)	M6010D ICP	103	25.9		*	mg/Kg	1.03	5.15	09/30/21 12:02	kja
Molybdenum, total (3050)	M6010D ICP	103	3.56	B	*	mg/Kg	2.06	10.3	09/30/21 12:02	kja
Nickel, total (3050)	M6020B ICP-MS	515	1.38		*	mg/Kg	0.206	0.515	09/29/21 17:12	bsu
Selenium, total (3050)	M6020B ICP-MS	515	0.356		*	mg/Kg	0.0515	0.129	09/29/21 17:12	bsu
Zinc, total (3050)	M6010D ICP	103	45.9		*	mg/Kg	2.06	5.15	09/30/21 12:02	kja

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Moisture Content	D2216-80	1	63.6		*	%	0.1	0.5	09/23/21 16:45	jkh/mlp

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP				*				09/28/21 9:00	mep
Digestion - Hot Plate	M3050B ICP-MS				*				09/28/21 9:00	mep
Plant Tissue Pulverization	USDA #60, Method 53				*				09/28/21 8:00	gkh

Arizona license number: **AZ0102**

**Hudbay Minerals**

Project ID:

Sample ID: D1-20B BIO

ACZ Sample ID: **L68738-02**

Date Sampled: 09/21/21 10:11

Date Received: 09/23/21

Sample Matrix: Plant Tissue

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total (3050)	M6010D ICP	103	98.2		*	mg/Kg	5.15	25.8	09/30/21 12:13	kja
Antimony, total (3050)	M6020B ICP-MS	515	<0.206	U	*	mg/Kg	0.206	1.03	09/29/21 17:16	bsu
Arsenic, total (3050)	M6020B ICP-MS	515	0.162	B	*	mg/Kg	0.103	0.515	09/29/21 17:16	bsu
Cadmium, total (3050)	M6020B ICP-MS	515	<0.0258	U	*	mg/Kg	0.0258	0.129	09/29/21 17:16	bsu
Calcium, total (3050)	M6010D ICP	103	17700		*	mg/Kg	10.3	51.5	09/30/21 12:13	kja
Copper, total (3050)	M6020B ICP-MS	515	21.8		*	mg/Kg	0.412	1.03	09/29/21 17:16	bsu
Iron, total (3050)	M6010D ICP	103	118		*	mg/Kg	6.18	15.5	09/30/21 12:13	kja
Lead, total (3050)	M6020B ICP-MS	515	0.199	B	*	mg/Kg	0.0515	0.258	09/29/21 17:16	bsu
Magnesium, total (3050)	M6010D ICP	103	1900		*	mg/Kg	20.6	103	09/30/21 12:13	kja
Manganese, total (3050)	M6010D ICP	103	35.9		*	mg/Kg	1.03	5.15	09/30/21 12:13	kja
Molybdenum, total (3050)	M6010D ICP	103	2.99	B	*	mg/Kg	2.06	10.3	09/30/21 12:13	kja
Nickel, total (3050)	M6020B ICP-MS	515	0.386	B	*	mg/Kg	0.206	0.515	09/29/21 17:16	bsu
Selenium, total (3050)	M6020B ICP-MS	515	0.430		*	mg/Kg	0.0515	0.129	09/29/21 17:16	bsu
Zinc, total (3050)	M6010D ICP	103	49.3		*	mg/Kg	2.06	5.15	09/30/21 12:13	kja

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Moisture Content	D2216-80	1	55.8		*	%	0.1	0.5	09/23/21 16:45	jkh/mlp

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP				*				09/28/21 10:58	mep
Digestion - Hot Plate	M3050B ICP-MS				*				09/28/21 10:58	mep
Plant Tissue Pulverization	USDA #60, Method 53				*				09/28/21 8:15	gkh

Arizona license number: **AZ0102**



## Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

## QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

## QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

## ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

## Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

## Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

**Hudbay Minerals**

ACZ Project ID: **L68738**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

**Aluminum, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	2		1.98	mg/L	99	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.15	0.15			
WG528138PBS	PBS	09/30/21 11:46				U	mg/Kg		-15	15			
WG528138LCSS	LCSS	09/30/21 11:50	PCN53858	598		236.9	mg/Kg		177.8	266.2			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	1.0008		1.019	mg/Kg	102	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	1.0008		1.028	mg/Kg	103	80	120	1	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	103.0824	174	401.391	mg/Kg	221	75	125			M1
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	103.0824	174	419.622	mg/Kg	238	75	125	4	20	M1

**Antimony, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.0201		.01911	mg/L	95	90	110			
WG528328ICB	ICB	09/29/21 16:58				U	mg/L		-0.0012	0.0012			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-0.6	0.6			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.01		.00797	mg/Kg	80	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.01		.00782	mg/Kg	78	80	120	2	20	RL
L68738-02MS	MS	09/29/21 17:20	MS210826-5	5.15	U	4.21002	mg/Kg	82	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	5.15	U	4.1664	mg/Kg	81	75	125	1	20	

**Arsenic, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.05		.04882	mg/L	98	90	110			
WG528328ICB	ICB	09/29/21 16:58				U	mg/L		-0.0006	0.0006			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-0.3	0.3			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.05005		.05006	mg/Kg	100	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.05005		.05024	mg/Kg	100	80	120	0	20	
L68738-02MS	MS	09/29/21 17:20	MS210826-5	25.77575	.162	25.90312	mg/Kg	100	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	25.77575	.162	25.90697	mg/Kg	100	75	125	0	20	

**Cadmium, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.05		.04964	mg/L	99	90	110			
WG528328ICB	ICB	09/29/21 16:58				U	mg/L		-0.00015	0.00015			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-0.075	0.075			
WG528138LCSS	LCSS	09/29/21 17:08	PCN53858	1.52		1.411934	mg/Kg		1.22	1.82			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.05005		.049394	mg/Kg	99	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.05005		.0487	mg/Kg	97	80	120	1	20	
L68738-02MS	MS	09/29/21 17:20	MS210826-5	25.77575	U	25.382349	mg/Kg	98	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	25.77575	U	25.472649	mg/Kg	99	75	125	0	20	

**Hudbay Minerals**

ACZ Project ID: **L68738**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

**Calcium, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	100		101.1	mg/L	101	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.3	0.3			
WG528138PBS	PBS	09/30/21 11:46				U	mg/Kg		-30	30			
WG528138LCSS	LCSS	09/30/21 11:50	PCN53858	50500		49560	mg/Kg		40400	60600			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	67.98972		69.54	mg/Kg	102	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	67.98972		69.78	mg/Kg	103	80	120	0	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	7002.94116	6820	13925.6	mg/Kg	101	75	125			
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	7002.94116	6820	14471.5	mg/Kg	109	75	125	4	20	

**Copper, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.05		.0499	mg/L	100	90	110			
WG528328ICB	ICB	09/29/21 16:58				U	mg/L		-0.0024	0.0024			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-1.2	1.2			
WG528138LCSS	LCSS	09/29/21 17:08	PCN53858	4.7		4.68471	mg/Kg		3.8	5.6			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.05		.05142	mg/Kg	103	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.05		.05184	mg/Kg	104	80	120	1	20	
L68738-02MS	MS	09/29/21 17:20	MS210826-5	25.75	21.8	47.46933	mg/Kg	100	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	25.75	21.8	48.15578	mg/Kg	102	75	125	1	20	

**Iron, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	2		1.963	mg/L	98	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.18	0.18			
WG528138PBS	PBS	09/30/21 11:46				16.8	mg/Kg		-18	18			
WG528138LCSS	LCSS	09/30/21 11:50	PCN53858	368		316.3	mg/Kg		294	442			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	1.0001		1.039	mg/Kg	104	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	1.0001		1.03	mg/Kg	103	80	120	1	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	103.0103	206	319.918	mg/Kg	111	75	125			
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	103.0103	206	325.377	mg/Kg	116	75	125	2	20	

**Lead, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.05		.05062	mg/L	101	90	110			
WG528328ICB	ICB	09/29/21 16:58				U	mg/L		-0.0003	0.0003			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-0.15	0.15			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.05005		.0514	mg/Kg	103	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.05005		.05156	mg/Kg	103	80	120	0	20	
L68738-02MS	MS	09/29/21 17:20	MS210826-5	25.77575	.199	26.41355	mg/Kg	102	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	25.77575	.199	26.69065	mg/Kg	103	75	125	1	20	

**Hudbay Minerals**

ACZ Project ID: **L68738**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

**Magnesium, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	100		96.24	mg/L	96	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.6	0.6			
WG528138PBS	PBS	09/30/21 11:46				U	mg/Kg		-60	60			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	49.99828		47.97	mg/Kg	96	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	49.99828		48.11	mg/Kg	96	80	120	0	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	5149.82284	2180	7090.52	mg/Kg	95	75	125			
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	5149.82284	2180	7008.12	mg/Kg	94	75	125	1	20	

**Manganese, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	2		1.951	mg/L	98	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.03	0.03			
WG528138PBS	PBS	09/30/21 11:46				U	mg/Kg		-3	3			
WG528138LCSS	LCSS	09/30/21 11:50	PCN53858	246		232.1	mg/Kg		197	295			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	.5005		.497	mg/Kg	99	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	.5005		.499	mg/Kg	100	80	120	0	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	51.5515	25.9	76.581	mg/Kg	98	75	125			
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	51.5515	25.9	72.533	mg/Kg	90	75	125	5	20	

**Moisture Content**

D2216-80

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG527915</b>													
WG527915PBS	PBS	09/23/21 16:45				100	%		99.9	100.1			

**Molybdenum, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	2		1.997	mg/L	100	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.06	0.06			
WG528138PBS	PBS	09/30/21 11:46				U	mg/Kg		-6	6			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	.501		.502	mg/Kg	100	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	.501		.503	mg/Kg	100	80	120	0	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	51.603	3.56	54.353	mg/Kg	98	75	125			
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	51.603	3.56	54.477	mg/Kg	99	75	125	0	20	

**Nickel, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.05		.04922	mg/L	98	90	110			
WG528328ICB	ICB	09/29/21 16:58				U	mg/L		-0.0012	0.0012			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-0.6	0.6			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.05		.05063	mg/Kg	101	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.05		.05079	mg/Kg	102	80	120	0	20	
L68738-02MS	MS	09/29/21 17:20	MS210826-5	25.75	.386	25.39859	mg/Kg	97	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	25.75	.386	25.58477	mg/Kg	98	75	125	1	20	

**Hudbay Minerals**ACZ Project ID: **L68738**

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

**Selenium, total (3050)**

M6020B ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528328</b>													
WG528328ICV	ICV	09/29/21 16:56	MS210727-2	.05		.04832	mg/L	97	90	110			
WG528328ICB	ICB	09/29/21 16:58				.00013	mg/L		-0.0003	0.0003			
WG528138PBS	PBS	09/29/21 17:06				U	mg/Kg		-0.15	0.15			
WG528138LFB2	LFB	09/29/21 17:09	MS210826-5	.025		.02485	mg/Kg	99	80	120			
WG528138LFBD2	LFBD	09/29/21 17:11	MS210826-5	.025		.0242	mg/Kg	97	80	120	3	20	
L68738-02MS	MS	09/29/21 17:20	MS210826-5	12.875	.43	13.54521	mg/Kg	102	75	125			
L68738-02MSD	MSD	09/29/21 17:22	MS210826-5	12.875	.43	13.25669	mg/Kg	100	75	125	2	20	

**Zinc, total (3050)**

M6010D ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG528274</b>													
WG528274ICV	ICV	09/30/21 11:18	II210923-1	2		1.963	mg/L	98	90	110			
WG528274ICB	ICB	09/30/21 11:22				U	mg/L		-0.06	0.06			
WG528138PBS	PBS	09/30/21 11:46				U	mg/Kg		-6	6			
WG528138LCSS	LCSS	09/30/21 11:50	PCN53858	30.9		29.76	mg/Kg		24.7	37.1			
WG528138LFB1	LFB	09/30/21 11:54	II210910-2	.50045		.513	mg/Kg	103	80	120			
WG528138LFBD1	LFBD	09/30/21 11:58	II210910-2	.50045		.52	mg/Kg	104	80	120	1	20	
L68738-01MS	MS	09/30/21 12:06	II210910-2	51.54635	45.9	99.498	mg/Kg	104	75	125			
L68738-01MSD	MSD	09/30/21 12:09	II210910-2	51.54635	45.9	92.69	mg/Kg	91	75	125	7	20	



**Hudbay Minerals**

ACZ Project ID: **L68738**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L68738-01</b>	WG528274	Aluminum, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG528328	Antimony, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Selenium, total (3050)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
<b>L68738-02</b>	WG528274	Aluminum, total (3050)	M6010D ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG528328	Antimony, total (3050)	M6020B ICP-MS	RL	Recovery for either the LCS or LCS duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Selenium, total (3050)	M6020B ICP-MS	ZG	The ICP or ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.

**Hudbay Minerals**

ACZ Project ID: **L68738**

**Metals Analysis**

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Aluminum, total (3050)	M6010D ICP
Antimony, total (3050)	M6020B ICP-MS
Arsenic, total (3050)	M6020B ICP-MS
Cadmium, total (3050)	M6020B ICP-MS
Calcium, total (3050)	M6010D ICP
Copper, total (3050)	M6020B ICP-MS
Iron, total (3050)	M6010D ICP
Lead, total (3050)	M6020B ICP-MS
Magnesium, total (3050)	M6010D ICP
Manganese, total (3050)	M6010D ICP
Molybdenum, total (3050)	M6010D ICP
Nickel, total (3050)	M6020B ICP-MS
Selenium, total (3050)	M6020B ICP-MS
Zinc, total (3050)	M6010D ICP

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Selenium, total (3050)	M6020B ICP-MS
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**Soil Analysis**

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Moisture Content	D2216-80
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The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Moisture Content	D2216-80
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Hudbay Minerals

ACZ Project ID: L68738

Date Received: 09/23/2021 15:15

Received By:

Date Printed: 9/24/2021

#### Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Is the Chain of Custody form or other directive shipping papers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Does this project require special handling procedures such as CLP protocol?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Are any samples NRC licensable material?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) If samples are received past hold time, proceed with requested short hold time analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Is the Chain of Custody form complete and accurate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Are all labels on containers and are they intact and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12) Is there sufficient sample volume to perform all requested work?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Is the custody seal intact on all containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14) Are samples that require zero headspace acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15) Are all sample containers appropriate for analytical requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16) Is there an Hg-1631 trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17) Is there a VOA trip blank present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18) Were all samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NA indicates Not Applicable

#### Chain of Custody Related Remarks

#### Client Contact Remarks

#### Shipping Containers

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA36034	20.1	NA	15	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Hudbay Minerals

ACZ Project ID: L68738

Date Received: 09/23/2021 15:15

Received By:

Date Printed: 9/24/2021

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc.

168738

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Holly Beggy

Company: Hudbay Minerals

E-mail: holly.beggy@hudsonminerals.com

Address: 5255 E. Williams Circle, Suite 1065

Telephone: 520-343-5174

Copy of Report to:

Name: David Krizek

Company: david.krizek@hudsonminerals.com

E-mail: 5255 E. Williams Circle, Suite 1065

Telephone: 520-495-3527

Invoice to:

Name: Lionelyn Garcia

Company: Hudbay Minerals

E-mail: rosemontinvoices@hudsonminerals.com

Address: 5255 E. Williams Circle, Suite 1065

Telephone: 520-495-3545

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES



NO



If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring?

Yes



No



If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Holly Beggy

Sampler's Site Information

State AZ

Zip code 85629

Time Zone AZ

\*Sampler's Signature: Holly Beggy

\*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: 2021-SOILS

PO#:

Reporting state for compliance testing: No

Check box if samples include NRC licensed material?



SAMPLE IDENTIFICATION

DATE:TIME

Matrix

# of Containers

Drainage-1 RUSH  
(Under Plant)

Drainage 1-2-3-4 RUSH

Plant Tissue RUSH

D1-20A	9/21/21	8:30	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D1-20A Tree		8:30	SO	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D1-20A Bio		8:30	PL	1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NH-E		10:00	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D1-20B		10:11	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D1-20B Tree		10:11	SO	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D1-20B Bio		10:11	PL	1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCR-NH		11:00	SO	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

RUSH

Not sieved (soil)

COPY

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Holly Beggy	Holly Beggy	9/21/21, 11:35													

FRMAD050.06.14.14

White - Return with sample. Yellow - Retain for your records.



168738-2110010851